CMSC 436 Semester Project Ideas

We have created the following list of ideas as starting points for your semester projects. These ideas tend towards projects for which 1) there is a known or likely customer who would like to have such an app, 2) the app has some "wow" factor because it could have some impact on civic or social issues, or university life, and where appropriate, 3) the app creates and/or uses large publicly-available data sets, such as that found at data.gov, that are stored/retrieved from off the network.

Remember that these project ideas are only starting points. You will need to flesh out many details in order to come up with your actual project. Please put in your project bids by Wednesday, Oct. 21 at 11:59pm (See Piazza post for link to survey) because we need to get teams assigned and get the projects underway. If you have some ideas of your own, please send them to us by Friday, Oct. 16 at 11:59pm and we can add them to this list.

Note that some ideas may require the use of an actual Android device. Others can be done with an emulator. Many of these apps will require you to build some kind of back end server. In cases where specific topics are not covered in depth in this course, you will be expected to learn them on your own. Get started early.

Please read over the following list of ideas. We may add some additional choices, so check back. Then choose your top 5 choices and submit them through the Google survey form identified on Piazza.

1. Block Assessment Survey.

   In previous work with students in the MIEH 730 - Environmental Justice class, we found a need to develop and use an assessment app that allows users to rate a configurable number of aspects related to the livability of their neighborhoods.

2. Vehicle Fine Maps.

   Use a dataset such as: https://www.propublica.org/datastore/dataset/chicago-parking-ticket-data to give motorists a data-driven assessment of the likelihood of receiving a fine given their current driving patterns, parking choices, etc.

3. Free the Files.

   Build an app that gamifies the work being done by ProPublica to understand who is paying for specific political advertisements. See:https://projects.propublica.org/free-the-files/

4. Smell College Park app. Build an app that lets users report strong smells in their environment (often correlated with airborne pollutants). Based on existing work, such as Smell Pittsburgh. See: https://smellpgh.org/

5. Find A Plant (or Find An Animal).

   Using datasets (such as iNaturalist) which record plant/animal sightings, help folks locate potential trails, parks, or other public areas nearby where they are most likely to see a particular animal. General idea could be refined to specific categories (e.g. Find a Bird could be an app titled Birdwatcher Buddy, or Find a Fish could be The Angler's Compass).

6. Change My View.

   Inside the application participants respond to a selection of core questions (e.g. perhaps ten questions) about modern topics (for example, should USA have a single payer healthcare system). Participants are linked, anonymously and inside the application, to email partners who want to debate the question and have an opposing viewpoint. Some things to consider, include handling abusive behavior, etc.

7. Who Built That?

   Use dataset listing which brands own what other brands / companies. Allow user to enter brand, show them the direct owners and the affiliated brands. Cool project for someone to explore using graph databases. Bonus credit for allowing users to take a photo of the brand name/logo and have the brand appear automatically.

9. Rank My Store.

Users give each store they visit a score based on availability of healthy fruits and vegetables. Users can take pictures of stores and products, locate stores on a map, etc. Should include some kind of partner app, that allows administrators to visualize user-provided data.

10. The Oyster Recovery Partnership.

The Oyster Recovery Partnership office in Annapolis has a project to recover and recycle oyster shells from bars and restaurants in the region to use as oyster seed medium. The ORP sends trucks out through the region to collect them and dumps them in the bay at select oyster farming sites. Your app will help optimize collections times, routes, advise ORP when a restaurant has a sufficient supply to warrant a pick up on an optimized route would be helpful (see https://oysterrecovery.org/sra/).

11. Green space Audits.

This app will allow folks to map green spaces, categorize specific green spaces as active or passive, and rank the green space based on a variety of characteristics (low quality, medium quality, high quality using colors or different faces. The app should also allow users to track their visits to parks and give them points and/or badges for visiting the parks. There should also be a way for administrators to extract, visualize and process data from multiple user accounts.

12. Disc Golf Practice Aid.

Disc golf is a game in which players aim to throw flying discs into baskets located on a course. Develop an app that uses the phones cameras to capture players throwing the disc from a tee towards a specific basket. Process the video to provide feedback to the user about their throwing skill and style. There is a disc golf course near campus - See: https://www.dgcoursereview.com/ course.php?id=478

13. Go-No Go (NIH). The Go-No Go task is a test of inhibition. In this task, the individual is asked to press a button when the screen flashes one color and to do nothing when it shows another color. The type of data collected for each response should be: 1) Type of required response (Go or No-go) 2) The amount of time it took to elicit a response since the color showed on the screen 3) Whether the response was correct or not At the end of the demonstration, clicking 'Show data' will allow you to view a demonstration of the data collection. See the 'Data Output File' section on this page for an explanation of what the data means. In addition, please see flexiblemeasures.com for recommendations for how to structure the test.

14. Corsi-Block Tapping (NIH).

The Corsi-Block Tapping task is a test of visuospatial memory. In this task, the individual is asked to memorize a series of blocks that has been tapped by the test administrator, then tap the blocks in the exact same order. On the computer, participants memorize a series of flashing blocks. There are multiple rounds of testing, and the number of blocks to remember increases by one with each round. If the participant does not tap the blocks in the correct flashing order, they are prompted to redo that specific round one more time. If they miss the second round, the test terminates. The data should record the highest number of blocks that the participant memorized and how long it took the participant to complete the tapping task (for each round).

15. Trail-Making (NIH).

The Trail-Making task is a test for visual search speed. In this task, the individual is given a random pattern of circles on the screen. Each circle contains a number, and the individual is asked to connect those numbers in consecutive order (1-2-3-4, etc). Please search online for demonstration videos of this task. Students may also want to consider reviewing certain medical literature for recommendations on how to structure the test/randomize the trail pattern, and how each type of error on the trail-making test informs clinicians of patients' cognitive functions. Data collection should include, at minimum, the amount of time it took the individual to complete the test, the time at which each connection was chosen, whether it was the right or wrong connection, and possibly location on the screen where each circle is placed.

17. Daily Journal.

Journaling apps typically record just a text log, like a virtual diary, but our speech and actions contain a lot of information that describes how we feel. A journaling app that can record your speech, and possibly pictures you take (e.g. a selfie, your facial expressions tell a lot about you), or what activity you're engaged in, can all be used to find relationships in describing how you feel. The app can allow the user to start/stop an activity, record microphone, text, sensor data, as well as reminders and notifications about their activity, etc., all tagged with a timestamp to track the start/end of the activity. Also, making the app more accessible by deep linking through text messages to open/download the app.

18. Composting.

A few municipalities in Prince George's County have begun composting programs. Hyattsville is beginning such a program to complement its existing yard waste program to reduce tipping fees at landfills and increase use of food waste as a resource. How could an app help to engage participants and improve their composting behaviors?

19. Anti-litter campaign.

The City of College Park has developed an anti-litter campaign, and seeks ways to promote it. How could your app help? Could you gamify trash pickup? Could you document examples of litter in our environment? What else?

20. Bar/Restaurant recycling.

Most bars and restaurants in College Park do not recycle for a variety of reasons. The Student Government Association Sustainability Committee is working with the College Park Committee for a Better Environment to explore how to increase or maximize business recycling, beginning with some of the more popular collegiate bars. Can Bar and Restaurant customers help encourage recycling by the establishments they patronize?

21. Reducing single-occupancy vehicle traffic in Hyattsville.

Exploring potential current inefficiencies in bus routes, exploring ride sharing. One aspect of reducing vehicular traffic is increasing the use of mass transit; Hyattsville is also interested in increasing the efficiency of the many bus routes in the jurisdiction, primarily Metrobus, the County bus and the University of Maryland shuttle. This proposed project could also include commercial ride sharing programs as well.

22. Trails and bikes.

The proximity of University Park lends itself to bike riding to neighboring College Park and the University of Maryland, and this project seeks to enhance and expand the trail system to facilitate walking or biking. Some trails need to be clarified and improved, and all can be better mapped and promoted.

23. Food Pantries Support.

Riverdale Park is interested in collaborating with the University of Maryland to provide food supplies for the hungry and low-income residents of the Town. Apps could support the economic viability of local food production (e.g., community gardens, non-profit and for-profit urban farming), food recovery, and distribution of food and money from local stakeholders. This might build on current University efforts such as the Field of Greens, the Food Recovery Network and Terps Against Hunger.

24. Mosquito Control.

Residents of University Park have worked with staff to develop a mosquito control program, and seek to collaborate with the University of Maryland on means of improving and more thoroughly implementing the program, which involves voluntary measures by residents and other property owners.

25. Local community service.

Prince George's public schools have a requirement for a certain number of hours of community service for graduating seniors. Students often achieve these hours through community projects that foster sustainability and resilience. Apps could help to publicize, enroll and measure success of different community service activities.

26. Adopt a stream.

Every school and every building in the immediate vicinity of the University of Maryland is located in a subwatershed of the Anacostia Watershed. If, as a part of Green School certification or otherwise, every Prince George's County public school in the immediate surrounding area of the University of Maryland were to adopt a local stream, the potential for increased engagement in reduced contamination could be significant.

27. Removing invasive species.

As part of Berwyn Height's landscape management, removal of invasive species will help native plants and animals survive and thrive, and assist in biohabitat. Invasive species removal is labor intensive, but can be part of good volunteer recruitment.

28. Trash master.

Design an app that would allow citizens to: lookup their trashcan number, know when their trash pickup days are, get time estimate of when trash is picked up, report trash for city cleanup (photo & GPS), request and track the replacement of stolen trash cans. Hyattsville now has GPS trackers on its garbage trucks - show citizens where trucks are and when they are scheduled to pass a given location. Also, could support "just in time" trash pickup that let's residents schedule a pick up, or indicate a missed pickup. May work best for "special" items or locations, such as bulk trash, compost, multi-resident trash cans.

29. Recycling reminder.

Create an app that lets garbage collectors tag a residence (on a map) as not separating recyclables. Helpful electronic reminder sent to homeowner, homeowner on a given street, etc. Could include some historical views of repeat offenders.

30. Mobile survey system.

Allow people visiting a park or other city facility to take a survey, leave suggestions, etc. Could be based on scanning a posted QR code.

31. Citizen science.

Use an app to organize and execute distributed, crowd-source data collection and experiments. For instance, count the number of cars passing at a given intersection and identify the model/typ of the car (i.e., for school kids), or similar data for bird sightings, pest control, etc.

32. Heal City / Moving with the Mayor.

Support existing city programs by building a virtual game app where people get points or badges for completing activities/quests, such as walking a certain distance, visiting all parks in the city, eating 5 fruits and vegetables in a day, etc. Additionally, consider tracking city residents and awarding points based on various criteria such as walking or taking public transportation to an event.

33. Tree counters.

Tree surveys involve a very manual process. Can citizens help by mapping the trees in their neighborhood?

34. Can you help me?

When a constituent calls up angry about X, can you come up with a system to help city staff direct the caller to the correct and most meaningful agency and contact to solve the issue? What about just helping the staff to answer the question? May require AI approaches to learn the institutional routing information known by staff.

35. Ultrasonic connectivity.

Chirp.io offers an SDK for building applications that emit and process ultrasound signals. Ultrasound is interesting because it can be distinguished for other noises in a given environment. One application of this technology is to estimate the number of people in a given space. Another is to identify when two or more users are in close proximity, facing each other. For instance, I'm working on a project that is trying to track people with the flu to understand how flu is transmitted between people. A new startup in India is using ultrasound to transfer money between two users.

36. Planet.com.

Planet.com provides access to detailed map images around the world. Unlike other services, these images are updated relatively frequently. Therefore, the images may be useful in business intelligence applications, such as identifying the number of cars in a store's parking lot to see how popular that business really is. Another application might be to compute biomass in a given area, to determine how much fertilizer a farmer should use on their farm. Given the recent occurrences of hurricanes in the US, can you think up an interesting app aimed at disaster recovery?

37. Location-Based Tour Guide.

Build a system and framework where an author can create tours for a set of locations. The system allows users to link audio and video content to each stop on a tour. Users use the app to follow the tour and to automatically view linked content when they arrive at a particular location on the tour.

For example, UMD could create information content for interesting sites of campus, a history professor could create a tour of important sites at the Antietam battlefield, etc. App users could then go to these places and see the information.

38. Feelings Diary.

Your app will allow high-school to college age users to record and respond to negative personal feelings. See http://psychcentral.com/lib/an-overview-of-dialectical-behavior-therapy/ for more information.

39. Parent Screen Controller.

Create a calendar that specifies times when your apps can be used. The use case is for parents with kids that have tablet computers for school use. Could also include a reporting feature. The system should also terminate apps if they are already running, but later move into a blackout period. Most importantly, you must ensure that this system can't be defeated by just uninstalling the controller app. This will involve rewriting the Android system code, so only for dedicated hackers.

40. Collaborative Art.

Create an app that lets users collaboratively create art? For instance, let users virtually "tag" visible images on their phones (e..g, buildings) with hand drawn grafitti. The tags would be visible to others viewing the same buildings/structures through the app. Another possibility would be an app that allows people to create and share "Six-Word Memoirs" that are organized around geographic locations. See: http://www.npr.org/2008/02/07/18768430/six-word-memoirs-life-stories-distilled.

41. Call Your Mother.

We communicate with many different people. Often urgent, day-to-day communications crowd out other important communications, such as reaching out to extended family members. Design and create an application that tracks who the users call to a circle of people, and then presents the user with information or reminders that some contacts are being neglected. Some issues to consider are defining which contacts are part of the calling circle, what normal or acceptable calling patterns are, what happens when certain contacts haven't been called recently?

43. Locating Electricity Dependent Medical Equipment.

    From the web site: "Many in-home patients require the daily use of a piece of electrically powered durable medical equipment (DME). During a disaster or other event that leads to a prolonged power outage, these patients often end up at shelters or emergency rooms looking for sources of power or alternate ways to manage their medical needs. We need a reliable system available to identify, locate, and assist these individuals in a timely fashion."

    See https://www.innocentive.com/ar/challenge/9933433 for more information.

44. Feed the Kitty.

    With this app a circle of people can fund an event. Suppose that you and your friends want to get together to watch the super bowl. Such an event requires snacks, so the host for the event would create an event and make it available to a circle of people along with information about the event. People in the circle would use a payment service, such as Venmo or PayPal to fund the event and would receive some "receipt" for their contribution to it.

    Users could leverage existing social networking systems such as Facebook, Twitter, or Google+, controlling the distribution of the event. Event creators can post the event as a status to Facebook, Twitter, or Google+ to get the word out about the event. Any member who has visibility of a fund, can also share it to their social media circle. When a fund creator creates a fund, they can attach a hashtag to their fund. This will allow a fund page to have a stream of statuses about their fund.

45. Read Aloud with Stuffed Animal.

    This app will allow a small child to create a simple text story, laid out over several book pages. Your app might allow the child to illustrate the story's text. This story can then be sent to an electronic stuffed animal that can read the story back to the child, automatically turning the pages of the story as the story is read.

46. Audio Dictionary.

    Students learning languages often find it difficult to learn how to pronounce words correctly. This app will allow native speakers of a particular language to record themselves pronouncing a word by itself and a word in a sentence. These audio snippets are then attached to the dictionary entry. In addition, native speakers have the ability to rate individual audio snippets to ensure that they are pronounced correctly.

47. Who's There?

    This app allows people to meet up with friends. For instance, if the user is in the same building as a friend both would each receive a notification informing them that the other friend is in the building. This app should be configurable so that it only notifies people when meeting up would be unusual to some degree. For example, family members shouldn't be notified each time they enter their common home. In addition, this add should be configurable so that the distance at which two people are considered to be in the same place changes. This might interact with meeting frequency as well. If a friend I haven't seen in a year is 50 miles away, I might want to be notified. In addition, this app could be expanded to consider a user's likely location in the future (by examining the user's calendar).

48. Context-aware Ringer

    This app allows users to define different ring volumes and settings for different contexts, such as when they enter a certain location or place. For example, your app would allow users to configure their phone to go into 'Do Not Disturb' mode every time they enter a library, movie theater, or A.V. Williams or lower the phone's volume if they are using headphones. Ideally, your users could control and define a number of different contexts and enable and disable them easily. You might get even more creative and create an app that learns from its user how to respond to particular events when in different contexts. If you're interested in this idea, you may want to look into Google's new Awareness API: https://developers.google.com/awareness/overview

49. Blockchain.

Blockchain is a hot technology that allows people and businesses to exchange value in a trusted way. For example, blockchain underlies the virtual currency, BitCoin. Build an app that could be used within a factory to scan/photograph an item as it's being assembled and to add that work step into a blockchain implementation. It should be possible to go back later and investigate identified defects against the assembly process.

50. uCurate

This app will encourage art enthusiasts to explore their local communities and discover its art. Piloted on the UMD campus, art pieces (as defined by the user) can be tracked by location and by image. Users can organize subsets of these art pieces into collections. The app will then create walking tours allowing other users to visit this collection. Additional features may include public artworks tagged by users, supplementary information designated by gallery/museum curators, etc.

51. Geek-Out.

Adapt the tabletop trivia game Geek-Out for use on a mobile platform. Geek-Out asks open-ended questions that can have multiple answers, such as "Named Fictional Dragons" or "Coen Brothers' Films". Advantage is given to players who know more rather than players who say answers faster. This app should allow multiple players to play at the same time (possibly remotely).

52. Barze.

Create an app that allows users to record and check key information about bars in the College Park area. Such information might include the current wait time for entry, cover charge, ambience once inside, etc. The application receives this data from the users similar to how Waze updates the current traffic conditions and special hazards on the road. Consider how your app will incentivize user participation.

53. Seefood.

With this app users will take pictures of food labels and the app will extract nutritional information from the food labels. This capability will be used in some nutritional use cases (diabetes or high blood pressure sufferers, people trying to lose weight, people supporting vegetarian lifestyles, etc.) Rather than expecting the user to record every single food item they eat the purpose of the app would instead be to give a visual display to see how a serving size of the food plays into a healthy, daily diet. For example could show a pie chart with what percentage of daily sodium the serving would be.

54. Lost & Found.

People sometimes misplace their belongings. This app would implement a "lost-and-found" system that allows users to both (1) search for a lost item on campus, (2) to indicate that they have found a misplaced item that belongs to another – by making a posting with details such as the location found, pictures, item description, and tags (for searching ability), and (3) to arrange to transfer the lost item to the item's owner.

55. StoryBoard.

An app that will help organize thoughts, connect the writers' community, and advertise products for writers. The Storyboard app will help writers come up with ideas, organize ideas for an original story, suggest plots or themes for writing prompts, etc. Along with weekly challenges to be submitted to the communities, and individuals beta-reading/viewing other writer's pieces, this app helps connect the writers' community and further improve an individual's creative prowess via pushing the limits of their current studies and providing peers to learn from.

56. Local Apparel.

This app will allow people to sell and rent clothes to people near them. Sometimes people may not afford to buy a whole new wardrobe or do not want to buy a whole new outfit for a particular event where they will only wear it once. This app will allow people to post any clothing piece they might want to get rid or rent a certain piece of clothing in order to get some

money in their pocket, while still helping people who want or need their clothing. This app will track the sellers and customers location and filter the clothing items displayed based on proximity. How will your app be better than other similar, existing websites? Be creative.

57. Food Infrastructure Assessment Project.

A UMD prof has a paper-based tool to assess the quality of foods in stores that sell groceries including grocery stores, convenience stores, dollar stores, and pharmacies. In the end, each score receives an overall food quality score. It would be great to transition this to an app which would make it easier to complete and allow us to expand some of the categories. Another addition is adding a spatial tool that allows users to know whether they are in a food desert or food swamp, nearest grocery store, information on food delivery services, food related health tips, etc. Gamification would make this interesting.

58. Stomp COVID Rumors.

Can you develop a COVID-19 education app that helps students on campus track rumors of COVID infection that may be in their dorms, living spaces, among their friends, etc. The app would have a diary function that allows students to note when they hear about a rumored COVID-19 case and also note where that supposedly occurred. Accumulated crowd sourced data should be visible to users for additional analysis.

59. Queue Up.

Develop an app that allows people to intelligently schedule and use multiple shared resources. For instance, suppose there is a set of laundry machines that are available to use. The app should allow people to get into line, set a preferred start time, and then give them notifications when the requested machine is available. Depending on the kind of system being managed, the app should remind people when their service is about to end and should intelligently move work around based on real time behaviors in the system.

60. Wearables.

Use the device's microphone to track ambient sound patterns throughout the day. Compare this data to measures of the user's heart rate (taken manually?). Add meditation/relaxation techniques walkthroughs and encourage users to follow them when heart rate rises.

61. Sharing Content Anonymously.

OnionShare allows users to securely and anonymously send and receive files. After installing Onion Share the sender and receiver exchange an (onion) address via a messenger, email or whatever. Then they drag and drop the files to share into their running OnionShare programs. OnionShare exists for Mac, Windows and various linux distributions. But in some scenarios, you can't access your computer to quickly share one file. What if you want to securely exchange files using OnionShare with your smartphone? A solution like OnionShare for smartphones would come in handy.

62. Engineering 4 All.

In the E4USA project, Fraunhofer USA and UMD are developing a generic learning management system focused on supporting engineering design workflows. This system is not designed to work on smartphones. A smartphone-based app would provide access to a subset of features, such as dashboards, status updates, etc. The app will require integration with major learning management systems (e.g., Canvas).

63. Poker Cash Game Session Tracker.

Write an app that allows cash-game poker players to track their sessions, to track how much they win/lose, to calculate their win-rate (in big blinds/hour), variance and std. deviation, and to see those results plotted over time. The app will allow users to create game sessions and track a number of statistics. Each session incorporates information such as play location, the stakes played for, the game type (Pot Limit Omaha, No Limit Texas Hold 'Em, etc.), initial buy-in, and cash-out total, or zero if they get felted.

64. Exposure meter.

Write an app that detects and records nearby devices. The app should be configurable in terms of proximity and time requirement for determining when a contact has occurred. The app should also allow a user to self report a potential exposure state, and cause the system to anonymously report this to other devices that were detected to be in proximity to the user's device.

See: https://www.wired.com/story/apple-google-bluetooth-contact-tracing-covid-19/

65. Covid food/medicine service for people living alone.

Write an app to search for, order, and deliver goods and services for people who live and quarantine alone at home - More like a community service who choose to help each other.

66. Habit or hobby builder.

Because of the large amount of time people are spending at home, many people are taking up new hobbies. The app should assist them in building/improving one habit or a hobby. Examples could include drawing, singing, gardening, fitness routines, etc.

67. Inventory management at shops.
A lot of items were not available in the shop(initial days of pandemic). If there is an alert system based on what inventory is available, customers can plan their visit to the shop based on the availability of items. This has to be done in an intelligent way without leading to a crowd at the shop

68. Health improvement.
While a lot of people have become health conscious during pandemic, many are falling victim to bad eating habits and lack of exercise. Help these people manage their eating habits and get fit.

69. Grocery management using ML
As you should cut down the visits to any shops, getting groceries every week might not be possible during the time of pandemic. Based on historical consumption of your family, given the number of days, predict how much grocery to buy for those many days. A simple regression model should help.

70. Android 11 Easter Egg Cat Game
Android 11's easter egg has you take care of cats similar to the tamagotchi games. Since it is not available in Android 10, try to make a clone of it with more features. You can add cat customization or mini-games in your version. Maybe add leveling or progression too.

71. Kind Words
With the quarantine, people are feeling down. Write an app that lets people write letters anonymously and let other users respond with positivity and encouragement. To keep the good vibes, make sure you incorporate a punishment system for those that just want to bring others down.

72. Slackr
It used to be easy to find study groups, just go to class and talk with your neighbors. However, it's kind of hard to do now that classes are online. Make a group matching app that lets users create a profile and match with other users who share their same study habits or the lack thereof. You can include social media integration to help with your app.

73. Digital Locker App
Write an app that allows saving an uploaded document in an encrypted form and store it in the Internal Memory, to avoid any kind of hacking.This makes it very efficient and reliable as we do not have to carry every document with us every time. Various documents such as Passport, SSN cards etc. are essential and can be needed anytime. Also, if we lose them or drop them somewhere by mistake, they can be misused. Uploading them on servers is risky as it can be hacked. On the other hand, keeping them openly on our phones is not good either. The data can be stored in the device using SQLite. And for the front end and functioning, you can use the Android Studio and Kotlin as you see fit.
The best thing about this system is that it is secured with a PIN. This PIN is created by the users to access the file while registering themselves on the application. Secure pin will ensure the safety of the document even if the phone is with someone else. The files are secured in such a way that no intruder can access them in any case.

75. COVID-19 Return to Work app.
   Write an app that can be used to monitor the general health of its users. The app should lso allow users to check against a set of potential COVID-19 symptoms before coming on campus, entering a workplace, entering a shop, etc.It will help its users with general medications and awareness with the current COVID-19 situation. It will have information about what to do in some critical situations.
76. UMD Study App
   Write an app that allows users to respond to a set of questions using a chatbot format. This application should allow question and answer sessions with programmable logic such that students who answer certain questions correctly can go on to other topics, while students who struggle on a topic receive additional questions on the same topic.
77. Student Expense Tracker System
   Write an app that provides expense tracking for those who have a limited budget but are bad at keeping it. It can be best for college students, as they do not have any control over how they spend money. This project will help them keep track of where and how much they have spent. Along with that, it will also calculate the total expenses made yet.
78. Build a game like Mafia/Among Us
   Recently, people have been very interested in a game called Among Us. You can download the app and see its Gameplay if you haven't yet. This is basically an ambitious project where you would be creating your own mafia gaming application, which can have simple moving elements, some maps, a chatting application(to discuss whom to lynch!) etc.
79. Local News Application
   Write an app that helps the users know the news, article, and many other important things going in and around their surrounding city. This project will help people stay updated with the latest local know-how. In this app, the user would require to register themselves to the application. There will be at least two modules for this that are: the user and the admin. The user here can view the news, and even add the news with images. The admin on, the other hand, would be keeping track of all the uploads by the user to make sure there is nothing wrong or abusive.
80. Mobile eyes
   Write an app that allows a user to navigate the device and activate device apps by using voice or visual commands. For detection models, see:
   https://developers.google.com/ml-kit/vision/object-detection/custom-models/android
   For voice command for opening your app, see:
   https://developer.android.com/training/wearables/apps/voice